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Acquired Flexions of the Uterus

by

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ON THE

CAUSATION OF ACQUIRED FLEXIONS OF THE UTERUS,

AND

THEIR PATHOLOGY.

BY

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ON THE CAUSATION OF ACQUIRED FLEXIONS OF THE UTERUS, AND THEIR PATHOLOGY.

Dr. Graily Hewitt says in his new work, page 207, "I can draw no absolute conclusion from what I have observed as to the effects of particular accidents or special antecedents producing a flexion of the uterus backwards instead of forwards; for I have known the same kind of accident produce different results in this respect."

It is the object of this paper to clear up this point; to explain why in two cases, the same causes and conditions apparently existing, an anteflexion is found in the one, a retroflexion in the other.

I was led to consider this subject from being so frequently asked to explain it by students and other gentlemen attending my out-patient room at the Soho Hospital; and having now for the last seven or eight months given the explanation contained in this paper, and it having been

considered reasonable by all to whom I have given it, I have ventured to bring it before this Society for still further discussion and criticism.

It will be well to introduce the subject by noticing very briefly the anatomical position of the uterus, its ligaments, and its position in the pelvis.

The uterus is situated in health high up in the pelvis, the fundus being slightly above a line drawn from the promontory of the sacrum to the top of the pelvis, and its axis being at right angles to the plane of the brim of the pelvis. It is supported by the vagina and by its ligaments, and is maintained in its position centrally in the pelvis by its attachment anteriorly to the base of the bladder, and posteriorly by that portion of the peritoneum which forms the base of Douglas's pouch, and which passes from the uterus behind to the rectum and sacrum beyond—the utero-sacral ligament.

These join the uterus at the upper part of the cervix, at that part corresponding very nearly to the situation of the internal os. The fundus uteri and the cervix are, compared to this part, freely movable backwards and forwards, less so from side to side, as the broad ligaments prevent lateral motion of the fundus to any great extent. The fundus being thus free and the uterus being a more or less pliable organ, the fundus may be, under various conditions, more or less altered in its position; that is, it may become more or less verted or flexed, but the healthy uterus possesses sufficient rigidity or tone to recover its normal position directly the conditions causing the flexion or version are removed.

The above is corroborated by the following, taken from a lecture given by Graily Hewitt at University College Hospital. "The axis of suspension of the uterus is represented by a horizontal line passing through the uterus from side to side, about the situation of the internal os uteri; this leaves half the uterus above the point, half below it. The lower half is effectually fixed, the upper half is very ineffectually fixed except in reference to lateral motion, which is not allowed except to a slight degree." But besides this antero-posterior and lateral movement of the fundus, there is

another, the rising and falling of the whole uterus in the pelvis; which is very important, and in which, I think, lies the whole explanation as to the direction which the fundus, in any case of flexion, may take. It is a well-recognised fact that all the solid organs in the body vary in position somewhat, according to the position of the patient; thus the liver occupies a somewhat lower position when a person is standing than when lying down. So the uterus; it falls slightly from the same cause, and may do so to a considerable extent even in health. As a proof of this, if necessary, we may refer to the ease with which on examination the uterus may be pushed up with the finger, or drawn down by a hook when necessary for operation. Again, the patient herself can by deep breathing considerably alter the position of the uterus in this respect. This point I do not suppose any one will contradict, but the following one on which I lay great stress may be questioned, and I wish to call especial attention to it. It is this, that when the uterus so alters its position by such an ascent or descent in the pelvis, it alters also the direction of its axis; so that in whatever place in the pelvis the uterus may be situated, its axis is at right angles to that plane, and by looking at these three rough drawings which I have made you will, I think, not only see what I mean, but see also and at once how much the direction the fundus in a flexion takes depends on the situation or height of the uterus in the pelvis at the time that the flexion is produced.

What first directed my attention to this alteration in the direction of the axis of the uterus was the direction the uterine sound took in cases of prolapsus, when the uterus was not much enlarged and only just extruded from the vulva. It invariably went backwards, in a direction quite opposite to the normal. Then I noticed in cases where the uterus felt low in the pelvis and yet in which no flexion nor version existed (at least when the patients were lying down), that the sound went in perfectly straight, towards the promontory of the sacrum. Thus I noted that when the uterus was situated low down, at the outlet of the pelvis,

when in the middle plane, and when in its normal position, its axis was regularly altered, and in fact agreed entirely with the axis of the pelvis; and thus I first clearly (as I think) saw why the same causes might produce such opposite conditions as anteflexion and retroflexion.

And when we think of the uterus in its relation to the pelvis, and of its normal up and down movements with respiration and ordinary exertion, we can see, I think, what trouble it would give were it to sink and maintain, when it had reached the middle plane of the pelvis, the same direction as when high up. It would in such a case lie directly across the pelvis, pressing on the rectum behind and the bladder in front; it would, in fact, be anteverted, which all allow to be an abnormal position.

The reason, then, why in different cases the same cause produces sometimes anteflexion and sometimes retroflexion is, according to these views, simply this:—That when an anteflexion is produced the uterus is, at the time that the cause comes into action, situated high up in the pelvis, occupying its normal position, the axis being forwards, as in No. 1; so that any force striking it from above would impinge on the *posterior* and upper surface of the fundus, and so force it forward and produce anteflexion; that when a retroflexion is produced the uterus has sunk more or less deeply in the pelvis, with the axis directed more or less backwards, as in No. 3; and in this case any force striking it from above would impinge on the *anterior* and upper surface of the fundus, and so force it backwards and produce retroflexion.

To prove the truth of these views I purpose, first very shortly to run over the causes of flexions generally, and then to bring forward cases to exemplify the facts stated; and these I do not take from my own out-patient room, but from Graily Hewitt's work, as those quoted by him without regard to these views support them just as well as any cases that I might have picked out from my own patients.

Flexions generally, then, according to Graily Hewitt, are predisposed to by the following causes:

1. An unhealthy state of the body generally.
2. A previous pregnancy.

In the first the tissues of the body imperfectly or badly nourished are relaxed and wanting in tonicity. The circulation in the blood-vessels is retarded under these circumstances; it is sluggish and imperfect, and the tissue changes take place with greater slowness than under ordinary circumstances and in a state of health. The effect of this state of things upon the uterus is most marked; it increases in size, its circulation becomes slow, and as a necessary mechanical result of this there occurs a diminution in the rigidity or tonicity of the uterus itself, which is one of the most important agents in preserving the uterus intact; in other words, the uterus becomes pliable in an unusual degree. This is a state of things which constitutes a strong predisposition to changes of shape in the uterus.

The other predisposing cause is pregnancy. After labour involution in untoward circumstances goes on in a very inactive manner, leaving the uterus larger for some considerable time than it should be, and also of necessity more pliable. The increased size affects not so much the cervix as the body of the uterus, which, as already stated, is from its want of connection more predisposed to a change of position.

Now, the truth of these remarks cannot be controverted. But besides the uterus being so affected, we must remember that the whole body is affected by these conditions. All the pelvic organs as well as the uterus get into a relaxed, atonic condition; the vagina and the ligaments of the uterus are relaxed, and this favours descent of the uterus, which, as this paper is intended to prove, most strongly predisposes to retroflexion. The muscular coats of the bowels lose tone, constipation results, and more or less congestion of the hæmorrhoidal vessels exists.

Then as to pregnancy. The increased size and weight of the subinvoluted uterus, existing as it does with loss of tone of the vagina and of the uterine ligaments, tend to cause,

more or less, descent of the uterus also ; and, as it descends, its axis alters, and a tendency to retroflexion exists.

Again, with regard to exciting causes, Graily Hewitt says, "It may be simply an exaggeration of the predisposing ones, thus pregnancy in a feeble woman may give rise to it ; or it is produced by strains, falls, jolts, remaining in a constrained position for any length of time, especially when associated with tight clothing around the waist." But let us divide these exciting causes into those producing flexions suddenly (traumatic flexions, Meadows), and those producing them gradually, and then consider their pathology.

1. The traumatic causes are those accidents causing a sudden jolt (as strains or sudden muscular efforts) to the body, especially those bringing into violent action the abdominal muscles, such as the violent straining sometimes necessary to relieve the bowels.

These may produce flexions in people in comparatively good health ; therefore they are much more likely to do so in those who are predisposed to them.

2. The exciting causes bringing on flexions gradually are, constrained positions maintained for a long time, such as the sitting position in needle and sewing-machine work ; or positions not constrained, such as standing all day long, day after day, or any kind of work having a tendency to cause pressure downwards into the pelvis. Continued constipation may be mentioned as a cause ; but for this to have any effect it is necessary that the patient should be predisposed to flexions.

Now let us take three cases of traumatic flexion where, in Case 1, an anteflexion has been produced in a girl previously healthy ; Case 2, where a retroflexion has been produced after confinement by the slight jolting of a feeble patient ; Case 3, where a retroflexion has been produced in a virgin predisposed to flexions by some of the conditions enumerated above. And let me again, before relating these cases, repeat that the explanation of these various flexions being produced by the same cause lies in the fact, that the uterus may under different circumstances occupy a very different

position in the pelvis; that its height in the pelvis, and consequently the direction of its axis, varies very much.

The first case is taken from a lecture given by Graily Hewitt.

A young, unmarried lady previously in good health, having been dancing for five or six hours the night before, does not feel very well the next morning; and, in coming down stairs, she slips and falls two or three steps and receives a violent jerk. She experiences intense pain, and a few days afterwards on examination acute anteflexion is discovered.

Again, another case of Dr. Hewitt's.

A lady, four days after parturition, in the absence of the nurse gets out of bed and walks across the room to fetch something. She experiences sudden, severe pain and returns to bed. After a few months of continuous discomfort an examination is made and retroflexion of the uterus is discovered.

In these two cases there is the same cause; though in the case of the young lady it is the jolt of the fall, in the elder lady merely the slight jolting caused by the tottering walk of a weak woman. In the one case anteflexion, in the other retroflexion is produced; and I explain it thus.

In the young lady the uterus is high up, in its normal position; the axis is forwards, the fundus looking forwards, as in diagram No. 1. The jolt causes pressure downwards. and this, impinging on the upper and *posterior* surface of the fundus uteri, pushes it down, forwards, in the direction in which it was lying, and so causes anteflexion.

In the elder lady just confined, immediately she gets out of bed, from relaxation of all the tissues and increased weight of the uterus, the uterus becomes prolapsed and descends to the position represented in diagram 3. The pressure downwards, produced by the mere jolting of walking, impinging as you see it would here, on the *anterior* and upper surface of enlarged, subinvoluted uterus, is amply sufficient to force the fundus backwards and produce retroflexion.

Again, take the third case, where retroflexion is produced by habitual constipation in a weakly virgin. The tissues of

Fig. 1.

Fig. 2.

Fig. 3.

the pelvis, vagina, uterus, with its ligaments, &c., have got relaxed from previous bad health; she suffers, most likely, from a leucorrhœal discharge; her bowels are constipated, and she strains a good deal every two or three days when the bowels act and has done so most likely for two or three years. This straining at stool is the exciting cause. It forces down the whole of the pelvic viscera time after time; the uterus has become enlarged and lost its tonicity from the derangement of the general health, and gradually comes to occupy a position either as in No. 2 or No. 3 diagram. At last a rather harder strain than usual on going to stool occurs, the fæces are suddenly expelled, the whole of the force is exerted on the fundus uteri, which, having now nothing to support it behind, is pushed back into the retroflexed position.

Now these cases might be repeated to any number; scarcely an out-patient day of mine passing without examples of such condition, presenting themselves.

Statistics, too, compiled without regard to these views, also support them, that is, anteflexions are much more common in young adults, and in the virgin state, and in those who have not had children; whereas retroflexion is much more common in older women, and in women who have borne children. That is, in virgins and in young adults, in whom there has been no or very little tendency to the production of any amount of prolapse, by enlargement of the uterus or relaxation of its tissue, by pregnancies, and various other conditions—in whom, in fact, the uterus retains its normal position high up in the pelvis—anteflexion is more common.

In older women, and especially in those having borne children, the uterus is larger and has been exposed to all the influences which tend especially to produce more or less prolapse; and in them retroflexions are more often produced.

Again, when retroflexions exist in virgins, the history of the case will almost invariably disclose the existence of leucorrhœa for some considerable time, indigestion, constipation, &c., and the patient is anæmic. All these conditions have gradually lowered her general health, and caused relaxa-

tion of all her tissues, some enlargement of the uterus and consequently some prolapsus, with its accompanying alteration in the direction of the uterine axis.

This explanation of the causation of flexions is hinted at in Thomas's work on 'Diseases of Women.' At page 327, when treating of prolapsus, he gives a diagram showing the alteration of the uterine axis in the various stages of prolapsus. Again, at page 401, when treating of retroflexions, he asks why endometritis with areolar hyperplasia so frequently results in retroflexion as well as in anteflexion; and he says that "it does so because the first effect of the increased uterine weight attending that disease is descent of the uterus. This relaxes the round ligaments, tends to bring the uterine axis in coincidence with that of the middle of the pelvis, and favours retroflexion."

According to Savage, he is certainly not right in thus speaking of the relaxation of the round ligaments; for in Savage's work, Plate XI, on the structures supporting the uterus and opposing its prolapse, he shows that neither the broad nor the round ligaments are at all stretched till very considerable prolapse has taken place. In describing Plate XI, fig. 2, Savage says that complete prolapse is effected only after the yielding of the pelvic reflexions of the broad ligament. This occurs from behind forwards, the round ligaments being the last to be put on the stretch.

I have not referred to these remarks of Thomas's before because these views of the causation of flexions were written in the beginning of this year, before I had seen his work. In no other book can I find any reference to this subject.

Pathology of Flexions of the Uterus.

In considering the pathology of flexions, we must divide them into those produced suddenly in uteri previously healthy, traumatic flexions; and into those which have been brought on in people previously predisposed to them, in whom the flexion may be due to simply an increase of the predisposing causes; and we will consider the latter first, as

the explanation of their pathology seems to me to be the easier.

All predisposing conditions, as we have just seen, tend to cause an enlargement of the uterus and a loss of its tone, with also a loss of all the uterine supports; allowing the uterus to sink in the pelvis and to get into such a position that the least extra force is sufficient to cause retroflexion.

In these cases the uterus is gradually pushed over, or, one might say, falls over into a flexed or verted condition, on account of the loss of tone of the whole of its tissue rendering it too weak to uphold the fundus uteri, increased as it is in its size, weight, and consistence.

It falls into the retroflexed position rather than the anteflexed, because its increased size and the loss of support, from the atony of the uterine ligaments, has allowed it to sink into the pelvis. As it has descended, the direction of its axis has changed from directly forwards to directly backwards, and any force applied to it from above, as in straining at stool, or lifting heavy weights, &c., impinges on the *anterior* and upper surface of the fundus, and so forces it into the retroflexed position.

Once pushed over, once flexed, it is unable to recover itself, and remains in its abnormal position mechanically and by gravitation; simply from the loss of that elasticity and tone which has been gradually brought about by the predisposing causes. There is no necessity to ascribe its position to pressure from above; its increased size and the atony of its tissue is sufficient.

Of course I am here referring to cases of simple flexion; cases where the uterine sound can be introduced easily (though curved) without pain; and where the flexion can be reduced without pain; showing that there are no adhesions keeping it flexed. Those cases where the flexion is bound down by peritoneal adhesions, hardly come under the classification of simple flexions of the uterus.

In many cases of this kind no symptoms except those due to its prolapsed condition, that is, bearing-down pains and weight in the pelvis, exist; there is not even any dysmenor-

rhœa, though between the periods the flexion feels sufficiently acute to contract to a great extent the canal. But I believe the absence of pain during menstruation in these cases is due to the increased flow of blood to the uterus at this time being sufficient to straighten the uterus to a certain extent, and so reduce the constriction which exists between the periods. The uterus, in fact, becomes erect, and therefore straight, during the menstrual period.

The maintenance of the flexion I consider, therefore, in these cases to be simply mechanical; but in those cases where a flexion is brought on suddenly, by a sudden strain, &c., in a uterus previously healthy (traumatic flexion), what keeps the uterus in its fixed position?

In the cases we have just discussed we have seen that it was due to loss of tone of uterine tissue; but in these cases no loss of tone has occurred. Up to the time of the accident the patient was perfectly well, and had not suffered in any way from any uterine trouble.

When it is retroflexed it is explained, by some, by the pressure of the superincumbent intestines, which before were behind the uterus in Douglas's pouch, and so helped to maintain it in its normal position; but which, by the sudden strain, were forced from there by the flexed uterus, and have since rested on the uterus, and so prevented its returning to the normal position.

Allowing this to be the case, for the moment, in cases of retroflexion what is the cause of anteflexion, produced suddenly, being maintained? Here we have at all times the weight of the intestines on and behind the uterus; but to compensate this there is the bladder before, tending by its occasional filling to push up and replace the uterus.

Again, the tendency of the uterine tissue is always to recover itself and to return to its normal position, immediately the offending cause is removed. There is in many of the cases no loss of tone, no congestion, and consequent enlargement of the fundus uteri to explain it; for these accidents with these attendant results may occur in women previously healthy and who have never suffered, as far as they know,

from any uterine ailment, and yet the uterus remains after these accidents in a flexed condition. Inflammatory adhesions have not had time to form; and therefore in the first early stage the flexion cannot be maintained by them.

In these cases, then, as in the others, it seems to me that the flexion must be maintained by loss of tone of the uterine tissue, and in these traumatic cases the loss of tone is, I believe, due to some rupture of the uterine fibres, accompanied by a more or less extensive effusion of blood into the uterine tissue; the extent of the rupture, &c., depending entirely on the severity of the cause. These accidents, I believe, cause a bruising of the uterine tissue and rupture of some of its fibres and blood-vessels, much in the same way as they may affect the other muscular and fibrous tissues of the body; and thus they completely destroy for the time being the elasticity of the uterine wall, and consequently its power of righting itself.

The symptoms which accompany these accidents, such as acute pain, increased by movement of any kind, also point to such an injury having occurred. After accidents of this kind the patient is always more or less severely ill for some time; that is, the injury has set up a certain amount of inflammation, metritis. As this subsides the ruptured fibres heal; and, unless the uterus has been restored to its normal position, and this very rarely happens, from the patient not being seen soon enough, or when seen from there being too much constitutional or local disturbance present to advise mechanical interference, they heal in such a way as to maintain the existence of the flexion; and as time goes on some contraction of this newly-formed tissue generally takes place and causes the flexion to become still more marked.

I have not, I am sorry to say, any pathological specimens to show as a foundation for this theory of the maintenance of acute flexions; and, taking a uterus in one's hand as it is met with after death, it may seem impossible that such a tough though pliable organ could be injured to such an extent by such accidents. But it must be remembered that during life, and especially at the menstrual periods, the condition of the

uterus is very widely different to that seen after death; that at all times, though it is a soft and pliable organ, yet it possesses a certain amount of rigidity which renders it liable to be bruised by sudden, sharp strains; and that during menstruation, when distended and engorged with blood, when in fact in an erectile condition, it is yet still further predisposed to such injuries.

One clinical point which makes me believe in such a rupture occurring is, that in numerous cases the fundus is fixed in its relation to the cervix: I mean that by the finger you cannot straighten the uterus; pressure on the fundus causes movement of the cervix, and *vice versâ;* and attempts to reduce the uterus by means of the sound give great pain. At the same time the uterus altogether is not fixed in the pelvis. All this, I think, points to the fact that there exists some alteration in the uterine tissue itself, maintaining the flexion.

In the absence of any fresh pathological specimen I bring forward the following fact; that is, that in uteri flexed for some time there has been found post-mortem atrophy of the uterine tissue at the flexed part; chiefly on the concave side, but also on the convex side; showing that degeneration of tissue has taken place. This has been demonstrated microscopically by Virchow and others. Now, atrophy having been proved to exist at the point of flexion, may this not have originated in such an injury to the uterine fibre as I have described as caused by an accident?

In conclusion, let me again say that I have not brought these views hastily before the Society; but that for the whole of the past year I have been considering and discussing them in my out-patient room at the Soho Hospital; and the favourable reception they have met with there has tempted me to bring them here, that they may be more thoroughly and severely criticised.